

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-27 allowed.
2. The following is an examiner's statement of reasons for allowance: reasons for allowance are recited in Applicants remarks filed April 1, 2008.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

1. (currently amended twice) A method of treating a structure, ~~characterized in that it consists~~ comprising:
in producing an initial structure ~~(11; 101; 201)~~ comprising at least a main part and a secondary part, which have a mutual contact interface, and means formed from at least one region to be treated ~~(20; 106; 206)~~, which can vary in thickness approximately perpendicular to this interface due to the effect of a treatment of the material forming said region and spaced-apart pads (46; 106) having opposed faces that bear on the main part and the secondary part respectively; and in
applying this treatment to said region to be treated of said initial structure so as to produce a final

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structure (12; 102; 202) such that the variation in thickness of said region causes the formation of an internal space (25; 109; 209) extending parallel to this interface and at least between the said spaced-apart pads and extending between said main and secondary parts over at least one zone of said interface ~~and approximately parallel to this interface~~ or on the inside of at least one of said parts, some distance from ~~and approximately parallel to~~ said interface.

2. (Amended Once) The method as claimed in claim 1, characterized in that said means (20) formed from at least one region to be treated are integrated into said main part and/or into said secondary part.

3. (Amended Twice) A method for treating a structure ~~characterized in that it consist~~ comprising:
~~in~~ producing an initial structure (11) comprising at least a main part (13) and a secondary part (21), which have a mutual contact interface, and at least one of which parts has at least one region (20) to be treated, said region being adjacent or close to said interface and able to be reduced in thickness approximately perpendicular to this interface due to the effect of a treatment and spaced-apart pads (16) having opposed faces that bear on the main part and the second part respectively; and

~~in~~ applying this treatment to said region to be treated of said initial structure so as to produce a final structure (12) such that the reduction in thickness of said region causes the formation of an internal space (25) extending parallel to this interface and at least between the said spaced-apart pads extending between said main and secondary parts over at least one zone located in said

interface and approximately parallel to this interface or on the inside of at least one of said parts, some distance from and approximately parallel to said interface.

4. (Amended Twice) The method as claimed in claim 3, characterized in that it consist in producing an initial structure (11) comprising at least one complementary part (16, 18) having opposed surfaces (16a, 16b) that bear on said main and secondary parts, respectively, approximately parallel to said interface said region (20) to be treated lying in the vicinity of this complementary part and said treatment producing a reduction in the thickness of this region to be treated.

5. (Amended Once) The method as claimed in claim 4, characterized in that said complementary part (16, 18) comprises at least two spaced-apart portions said region (20) to be treated lying between these two portions and said treatment producing a reduction in the thickness of this region to be treated.#5¹

6. (Amended Once) The method as claimed in claim 3, characterized in that said region (20) to be treated results from an amorphizing ion implantation into at least one of said parts, causing the constituent material to swell, and in that said treatment consists in recrystallizing, preferably by epitaxial regrowth, at least part of the amorphized region so as to produce a reduction in its thickness.

7. (Amended Once) The method as claimed in claim 3, characterized in that one of said faces of said complementary part (~~16~~, ~~18~~) lies in the plane of said interface.

8. (Amended Once) The method as claimed in claim 3, characterized in that said complementary part comprises at least one pad (~~116~~) or wall (~~118~~).

9. (Amended Twice) A method for treating a structure characterized in that it consists:
in producing an initial structure (~~101~~, ~~201~~) comprising at least a main part (~~103~~, ~~203~~) and a secondary part (~~107~~, ~~207~~), which have a mutual contact interface (~~108~~, ~~208~~), and at least one complementary part (~~106~~, ~~206~~) having spaced apart pads (~~106a~~) as part of opposed faces (~~106a~~, ~~106b~~) that bear on said main and secondary parts, respectively, approximately parallel to said interface, and comprising at least one region to be treated that is capable of increasing in thickness approximately perpendicular to said interface due to the effect of a treatment; and
in applying this treatment to said region (~~106~~, ~~206~~) to be treated of said initial structure so as to produce a final structure (~~102~~, ~~202~~) such that the increase in thickness of said region of said complementary part causes a displacement of said main and secondary parts relative to each other, at least in the vicinity of said complementary part, and causes the formation of an internal space (~~109~~, ~~209~~) extending parallel to this interface and at least between the said spaced-apart pads and extending between said main and secondary parts over at least one zone of said interface and approximately parallel to this interface or on the inside of at least one of said parts, some distance from and approximately parallel to said interface.

10. (Amended Once) The method as claimed in claim 9, characterized in that said complementary part ~~(106; 206)~~ comprises at least two spaced-apart portions comprising at least one respective region to be treated that is capable of increasing in thickness approximately perpendicular to said interface due to the effect of a treatment, and in that the application of this treatment to these regions causes a displacement of said main and secondary parts relative to each other, at least in the vicinity of said portions, and causes the formation of an internal space ~~(109; 209)~~ extending over at least one zone of said interface, at least between said spaced-apart portions, and approximately parallel to this interface or on the inside of at least one of said parts, some distance from and approximately parallel to said interface.

11 (Amended Once) The method as claimed in claim 9, characterized in that one of said faces of said complementary part ~~(106; 206)~~ lies in the plane of said interface.

12. (Amended Once) The method as claimed in claim 9, characterized in that said complementary part ~~(106; 206)~~ comprises at least one pad or wall.

13. (Amended Once) The method as claimed in claim 9, characterized in that said treatment consists in producing gas bubbles in said region ~~(106; 206)~~ to be treated, so as to cause said increase in thickness of said complementary part.

14. (previously presented) The method as claimed in claim 1, characterized in that said main and

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secondary parts comprise superposed layers with a flat interface, at least in the zone of said space to be formed, at least one of which layers comprises a semiconductor material.

15. (previously presented) The method as claimed in claim 1, characterized in that said region to be treated contains at least one material capable of undergoing a heat treatment that causes its thickness to vary.

16. (Amended Once) The method as claimed in claim 1, characterized in that at least one of said parts includes a weakened zone (~~203a~~) in which said internal space (~~209~~) forms.

17. (original) The method as claimed in claim 16, characterized in that said weakened zone is obtained by ion implantation.

18. (previously presented) The method as claimed in claim 16, characterized in that the adhesion of said layers to one another is greater than the strength of said weakened zone.

19. (Amended Twice) A structure comprising:

at least two superposed layers, at least one of which comprises;

a semiconductor material, ~~characterized in that~~ it has an internal space (~~25; 109; 209~~) that

extends between said layers over at least one zone of their interface and approximately parallel to this interface or that extends on the inside of at least one of said layers over at least one zone lying some distance from and approximately parallel to said interface, and in that it includes

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means ~~(20; 106; 206)~~ constituting an integrated region having been varied in thickness approximately perpendicular to said interface due to the effect of a treatment of the constituent material in order to cause the formation of said internal space by spaced-apart pads (16; 106) on displacement of the surface of at least one of said layers in said zone of said space or by a spaced-apart rupture of the aforementioned layer in its aforementioned zone lying some distance from and approximately parallel to said interface.

20. (Amended Once) The structure as claimed in claim 19, characterized in that said integrated region ~~(20)~~ is located in at least one of said layers and extends parallel to said space, this integrated region having decreased in thickness.

21. (Amended Once) The structure as claimed in claim 19; characterized in that it comprises at least one complementary part ~~(16)~~ having opposed faces that bear on one of said layers and on the other, respectively, approximately parallel to said interface, said space lying in the vicinity of this complementary part.

22. (original) The structure as claimed in claim 21, characterized in that said complementary part comprises at least two spaced-apart portions, said space extending between these two portions.

23. (Amended Once) The structure as claimed in claim 19, characterized in that it comprises at least one complementary part ~~(106; 206)~~ having opposed faces that bear on one of said layers

and on the other, respectively, approximately parallel to said interface, and in that said integrated region is located in this complementary part, this integrated region having increased in thickness and said space lying in the vicinity of this complementary part.

24. (original) The structure as claimed in claim 23, characterized in that said complementary part comprises at least two spaced-apart portions, said space extending between these two portions and in that said integrated region is located in these portions.

25. (previously presented) The structure as claimed in claim 19, characterized in that it comprises at least one surface layer adjacent to or located in said interface, in particular a layer of carbon nanotubes.

26. (Amended Once) The structure as claimed in claim 19, characterized in that said zone ~~(203a)~~ lying some distance from and approximately parallel to said interface is weakened.

27. (Amended Once) The structure as claimed in claim 19, characterized in that said complementary part ~~(106; 206)~~ comprises at least one pad or wall.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to W. David Coleman whose telephone number is 571-272-1856. The examiner can normally be reached on Monday-Friday 9:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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